

Art Unit: 1794

CLAIM LISTING

Claims 1-59 Previously Cancelled

60. (Currently Amended) A method for producing a shaped porous material which comprises:

partially curing a phenolic resin to a solid that when ground can be sintered but that on carbonization does not melt;

grinding the solid into resin particles;

mixing the resin particles optionally with uncured novolak powder containing a cross-linking agent and with solid particles of a secondary component that remains after pyrolysis, does not shrink during pyrolysis and is selected from activated carbon powder, graphite, a metal, a metal oxide, an inorganic oxide, silicon powder, silicon monoxide powder or a mixture of carbon and silicon and silica, ~~and optionally a novolak~~;

adding liquid to the mixture and forming the mixture into a dough;

shaping the dough and sintering it to give a form-stable *porous* shaped solid product; and

pyrolysing the form-stable shaped solid product by heating to a carbonization temperature to give a form stable carbonized material having the shape of the form-stable solid product and in which the phenolic resin is decomposed to porous carbon.

61. (Previously Presented) The method of claim 60, wherein the temperature and duration of the partial curing step are selected to give a sinterable product that when ground to give particles in the size range 106-250 μm and tabletted give a pellet with a crush strength not less than 8 N/mm.

62. (Previously presented) The method of claim 60, wherein the phenolic resin is a hexamine-cured novolak resin.

63. (Previously presented) The method of claim 60, wherein the secondary component comprises a mesoporous activated carbon with a mean pore size in the 1-5 nm range.

64. (Previously presented) The method of claim 60, wherein the secondary component is powdered graphite.

Art Unit: 1794

65. (Previously presented) The method of claim 60, wherein the secondary component is copper, aluminium or tungsten.
66. (Previously presented) The method of claim 60, wherein the secondary component is an amorphous oxide, a zeolite, a layered clay or silica.
67. (Previously presented) The method of claim 60, wherein the grinding operation comprises hammer milling followed by jet milling.
68. (Previously presented) The method of claim 60, which comprises forming the dough by mixing the resin particles, secondary component and any novolak with methyl cellulose, PEO and water.
69. (Previously presented) The method of claim 60, wherein the material is shaped by extrusion
70. (Previously presented) The method of claim 60, further comprising activating the pyrolysed material using steam or carbon dioxide.
71. (Previously presented) The method of claim 60, which comprises further heating to a temperature above 1000°C.
72. (Previously presented) The method of claim 60, wherein the secondary component is present in the shaped and sintered material in an amount by volume of not more than 40%.
73. (New) A method for producing a shaped porous material which comprises:
- partially curing a phenolic resin to a solid that when ground can be sintered but that on carbonization does not melt;
 - grinding the solid into resin particles;
 - mixing the resin particles optionally with uncured novolak powder containing a cross-linking agent and with solid particles of a secondary component that remains after pyrolysis, does not shrink during pyrolysis and is selected from activated carbon powder, graphite, and copper;
 - adding liquid to the mixture and forming the mixture into a dough;
 - shaping the dough and sintering it to give a form-stable porous shaped solid product; and
 - pyrolysing the form-stable shaped solid product by heating to a carbonization temperature to give a form stable material having the shape of the form-stable solid product and in which the phenolic resin is decomposed to porous carbon.